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LETTER OF TRANSMITTAL AND U S EPA REGION IV COMMENTS ON DRAFT  
CORRECTIVE MEASURES STUDY REPORTS FOR SOLID WASTE MANAGEMENT UNITS 1  
AND 2 NAS KEY WEST FL  
10/20/1997  
U S EPA REGION IV



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
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OCT 20 1997

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Mr. Dudley Patrick  
Code 1852  
Southern Division Naval Facilities Engineering Command  
2155 Eagle Dr.  
Charleston, S.C. 29418

SUBJ: Naval Air Station (NAS) Key West, Florida  
EPA ID# FL6 170 022 952

Dear Mr. Patrick:

EPA has reviewed the following documents:

- o **Draft Corrective Measure Study Report for SWMU 1 - Naval Air Station Key West;** Brown & Root, Env., August 1997
- o **Draft Corrective Measure Study Report for SWMU 2 - Naval Air Station Key West;** Brown & Root, Env., August 1997

and has enclosed its comments with this letter. If you have any questions, please contact me at 404/562-8533.

Sincerely,

Martha Berry  
Remedial Project Manager  
Federal Facilities Branch

Enclosures

cc: Jorge Caspary, FDEP  
Ron Demes, NAS Key West  
Phillip Williams, NAS Key West  
Charles Bryan, Brown & Root  
Roy Hoekstra, Bechtel

## SWMU 1 GENERAL COMMENTS

The following general comments were generated during review of the Draft CMS Report.

1. The Draft CMS Report only addresses soil and sediment contamination within SWMU 1. However, the RFI/RI Report and previous investigations conducted at SWMU 1 indicate that the media of concern were determined to be soil, sediment and surface water. Justification for the removal of surface water as a medium of concern should be provided. The text should also provide details regarding the SWMU 1 mangrove areas and the presence or absence of surface water. The previous surface water analyses that warranted inclusion of surface water as a media of concern in the Draft FRI/RI Report should be discussed in more detail by including the location of and whether or not wet/dry season sampling occurred. The latest sample collection efforts at SWMU 1 were conducted in January 1996 and November 1996 which are typically dry season months. The Draft CMS Report should discuss in more detail the climatic conditions with respect to temporal trends for SWMU 1 and how they affect the surface water conditions at SWMU
2. The Draft CMS Report does not contain a consolidated list of acronyms used throughout the report. A list of acronyms should be included in the report.

## SWMU 1 SPECIFIC COMMENTS

The following specific comments were generated during review of the Draft CMS Report.

1. **Page ES-2, 1st Paragraph.** This paragraph states that "all human health risks were within the range considered acceptable (Incremental Cancer Risk [ICR] of  $1.0\text{E-}04$  to  $1.0\text{E-}06$  per individual and Hazard Index [HI]  $< 1.0$ )." However, page 2-31 of Section 2.5 indicates a different scenario. Paragraph 2 states that the "estimated carcinogenic risk for future residents ( $3.13\text{E-}04$ ), is greater than the EPA 'target risk range' of  $1\text{E-}04$  to  $1\text{E-}06$ ," and the last paragraph on the same page states that it is not within an acceptable range. This discrepancy should be corrected.
2. **Page ES-3, 1st Paragraph.** The text states that "The costs are itemized in the detailed cost sheets presented in Appendix A." However, Appendix A contains the human health risk assessment calculations. Appendix C contains the cost analysis for alternatives. The text should be corrected.
3. **Pages 2-45 and 2-47, Tables 2-7 and 2-8.** Some discrepancies were found between data presented in the Draft CMS Report and in the Draft RFI/RI Report. In Table 2-7, Contaminants of Concern in the Soil, and Table 2-8, Contaminants of Concern for Terrestrial Plants, the value for Frequency of Detection for lead is 54/58. However, in the Draft RFI/RI Report, the corresponding tables (4-29 and 4-30) report a value of 55/59. An explanation for the removal of a sample should be

provided in the text of the Ecological Risk Assessment Summary.

In addition, there is an inconsistency concerning the Hazard Quotient for lead in the Draft CMS Report and the Draft RFI/RI Report. In the Draft RFI/RI Report, the Hazard Quotient for lead, in tables 4-29 and 4-30, is "4.86" and "48.6", respectively. In the Draft CMS Report, the Hazard Quotient for lead, in tables 2-7 and 2-8, is "14.8" and "14.8", respectively. This inconsistency should be revised.

4. **Page 2-49, 1st Paragraph.** The last sentence of the paragraph mentions "Better terrestrial habitats are located on the west side of Stone Road . . ." On Figure 2-1, Site Location Map for SWMU 1, "Stone Road" is shown as an east/west road. The west side of an east/west road is difficult for the reader to locate. The text should be reworded to more accurately reflect the location.
5. **Page 2-49, 3rd Paragraph.** The text states that "Specifically, most of the elevated concentrations of soil contaminants were detected north of the gravel road at the north end of the site." However, the "gravel road" is not referenced on any of the maps provided. This important area should be properly depicted on the site maps.
6. **Page 4-4, Table 4-1.** The table includes preliminary screening of remediation technologies for soils for SWMU 1. However there are numerous references to SWMU 2 on pages 2 of 4, 3 of 4 and 4 of 4. The screening comments often refer to pesticide contamination, which would not be indicative of a screening comment for SWMU 1. The entire table should be closely reviewed and revised to ensure accuracy. Initial review indicated that the text reflects the correct information and the Table 4-1 will require revisions.
7. **Page 4-8, Table 4-2.** The table includes preliminary screening of remediation technologies for sediments for SWMU 1. However there are numerous references to SWMU 2 on pages 2 of 3 and 3 of 3. The entire table should be closely reviewed and revised to ensure accuracy. Initial review indicated that the text reflects the correct information and Table 4-2 will require revisions.
8. **Page A-2, 1st Paragraph.** This paragraph references treatment of surface water to maintain Remedial Goal Option (RGO) levels. However, surface water was not evaluated as a media of concern at SWMU 1.
9. **Page A-14, Table A-9.** This table is included as a summary of cumulative cancer risk for corrective measure alternatives 1 through 4. The ICR listed under Alternative 3 for Adult Trespasser (2.98E-06) could not be reproduced and appears to be incorrect. Based on the values listed in Table A-5, Cumulative Risks, Corrective Measures Alternative 3, the correct value for this ICR should be 5.43E-07. This discrepancy should be corrected.

## SWMU 2 GENERAL COMMENTS

The following general comments were generated during review of the Draft CMS Report.

1. The Draft CMS Report does not contain a consolidated list of acronyms used throughout the report. A list of acronyms should be included in the report.
2. Some discrepancies were found between the values presented in Table 2-5 titled "Ecological Contaminants of Concern in Groundwater - SWMU 2" and values presented in the corresponding table in the Draft RFI/RI Report, Table 4-57. Discrepancies were also found in values presented in Table 2-6 titled "Ecological Contaminants of Concern in Surface Water" and the values presented in the corresponding table in the Draft RFI/RI Report, Table 4-58. These discrepancies, between the Draft CMS Report summary data and the Draft RFI/RI Report values, are detailed in the specific comments. In general, the text between the two documents agree, except for discussion of the Ecological Contaminants of Concern (ECC)s.

## SWMU 2 SPECIFIC COMMENTS

The following specific comments were generated during review of the Draft CMS Report.

1. **Page ES-4, 1st Paragraph.** The text states that "The costs are itemized in the detailed cost sheets presented in Appendix A." However, Appendix A contains the human health risk assessment calculations. Appendix C contains the cost analysis for alternatives. The text should be corrected.
2. **Page 1-1, 1st Paragraph.** The next to the last sentence in this paragraph refers to "human ecological risk assessments." This sentence should be modified to read "human health and ecological risk assessments."
3. **Pages 2-41 and 2-42, Table 2-5.** Some discrepancies were found between data presented in the Draft CMS Report and in the Draft RFI/RI Report. In Table 2-5, the following ECCs were not found in the corresponding Draft RFI/RI Report, Table 4-57: 4-methylphenol, benzoic acid, and acetone. The following ECCs have different values for the Frequency of Detection: barium, beryllium, chromium, cyanide, lead, mercury, thallium, 4,4'-DDE, 4,4'-DDT, aldrin, beta-BHC, 1,4-dichlorobenzene, 2-methylnaphthalene, benzyl alcohol, bis(2-ethylhexyl)phthalate, 1,1-dichloroethene, 1,1-dichloroethene (total), benzene, carbon disulfide, cis-1,2-dichloroethene, vinyl chloride, and xylenes (total). Increased values in the Frequency of Detection column infer that additional samples were used in the summary Table 2-5. Furthermore, some values in the summary Range of Detected Values differ from the values in the Draft RFI/RI Report Range of Detected Values. These values are also attributed to additional sampling. Consequently, the summary ECC ranges that differ from the Draft RFI/RI Report ranges have expected

discrepancies in their Hazard Quotient (HQ) values. Further discussion is necessary to clarify the discrepancies between data.

4. **Page 2-43, Table 2-6.** Some discrepancies were found between data presented in the Draft CMS Report and in the Draft RFI/RI Report. In Table 2-6, the Ecological Threshold Value differs between the summary Table 2-6 and the corresponding Draft RFI/RI Report, Table 4-58 for 4,4'-DDD and heptachlor. Consequently, the HQ values also differ. See below. Further discussion is necessary to clarify the discrepancies between values.

	<u>Draft CMS Report (Table 2-6)</u>		<u>Draft RFI/RI Report (Table 4-58)</u>	
	<u>Threshold Value</u>	<u>HQ</u>	<u>Threshold Value</u>	<u>HQ</u>
4,4'-DDD	0.025 µg/L	58	0.0006 µg/L	2,416
Heptachlor	0.00021 µg/L	2.95	0.0036 µg/L	17.2

5. **Page 3-18, 2nd Paragraph.** The text states that “groundwater concentrations at SWMU 2 were compared to Tap Water RBCs [Risk-Based Concentrations] (EPA, 1996) and MCLs [Maximum Contaminant Levels] (EPA, 1995c) for comparison purposes as presented in Tables 2-7 and 2-8 of Section 2.5.” However, tables 2-7 and 2-8 present ecological contaminants of concern in sediment and soil respectively, for SWMU 2. Tables 2-2 and 2-3 present the occurrence, distribution and comparison to MCLs and Tap Water RBCs for inorganic analytes and organic compounds in groundwater, respectively. The text should be corrected.
6. **Page 3-21, 1st Paragraph and Page 3-22, Table 3-2.** The text states that “Table 3-2 presents the RGOs [remedial goal options] that would be protective (i.e., the most stringent) of all human exposure pathways of concern. Table 3-2 also includes the Florida Department of Environmental Protection (FDEP) clean-up goals for an industrial exposure scenario for the human health COCs [contaminants of concern].” However, although Table 3-2 has footnotes for the protection of human health risk evaluation [footnotes 1 and 2] and a footnote for the FDEP Industrial Soil Clean-Up Goals [footnote 3], this information is not included in the table. The table should be corrected to include the information from footnotes 1, 2, and 3.
7. **Page 3-28, Section 3.5.1, 2nd Paragraph.** The text states that “The total estimated aerial extent of soil . . . in Table 3-2 is approximately 66,000 ft<sup>2</sup> . . . .” However, Table 3-2 presents the soil RGOs for ecological receptor, surface water, and sediment protection. The table identified in the text is not Table 3-2 but the untitled table located directly above the text. In addition, the total estimated area is approximately 76,000 ft<sup>2</sup>, not 66,000 ft<sup>2</sup>. The text should be revised.
8. **Page 3-30, 1st Paragraph.** The text states that “only some samples (3 of 13) all of which are located north of the ditch exceed RCRA Action Levels and/or FDEP

Industrial Soil Clean-Up Goals presented in Table 3-2'." However, the FDEP Industrial Soil Clean-Up Goals are not presented in Table 3-2.

9. **Page 3-32, 2nd Paragraph.** The text states that "Figure 3-3 depicts a typical cross-sectional view of the ditch." However, Figure 3-3 was not included in the Draft CMS Report. Figure 3-3 should be included in the report.
10. **Page 4-9, Table 4-2.** According to Table 4-2, dewatering was a process option that was not retained. Explanations are provided under the Screening Comments heading for all of the process options not retained except for dewatering. In addition, for the solvent extraction process, there is no text under the Screening Comments and Option Retained headings. The table should be corrected.
11. **Page 5-3, Figure 5-1** In Figure 5-1, the block flow diagram for Alternative 3, there is an arrow pointing from the "contain/manifest/transport to permitted offsite facility for treatment/disposal" block downward to the "stockpile to drain and dry" block. The arrow should be pointing from the "stockpile to drain and dry" block upward to the "contain/manifest/transport to permitted offsite facility for treatment/disposal" block as shown in Figure 5-2. Figure 5-1 should be corrected.
12. **Page 5-8, 2nd Paragraph.** For Alternative 4, the text states that "Including QA/QC samples, seven sediment and five surface water samples would be collected and be analyzed for pesticides and metals." However, review of the Alternative 4 cost analysis (located in Appendix C) shows sampling for five surface water samples and five sediment samples and analysis (including duplicates for each medium) for seven surface water samples and seven sediment samples. This discrepancy needs to be corrected.
13. **Page A-6, Section A.1.2.3, 1st Paragraph.** This paragraph states that "cancer risks from contact with surface soil exceeded  $1\text{E-}06$  for all receptors under Alternative 3. The highest risk was  $1.91\text{E-}05$  for the occupational-worker." However, Table A-4, which is supposed to reflect these risks, indicates that cancer risks from contact with surface soil are well below the  $1\text{E-}06$  limit and that the highest risk is for the adult trespasser instead of the occupational worker. The discrepancies between the text and Table A-4 should be corrected.
14. **Page A-6, Section A.1.2.3, 2nd Paragraph.** This paragraph states that exposure to soils yields cancer risks greater than  $1.0\text{E-}06$  and refers the reader to Table A-5 for a summary of risk values. However, Table A-5 indicates that cancer risks from exposure to surface soil are all well below  $1.0\text{E-}06$ . The discrepancy between the text and Table A-5 should be corrected.
15. **Page A-10, Section A.1.3, 1st Paragraph.** This paragraph lists cancer and non-cancer risks associated with Alternatives 1 through 4. The risk values should match those in Table A-8 on pages A-12 and A-13, but in many cases, they do not. The

discrepancies between the text and Table A-8 should be corrected.

16. **Page A-12 through A-15, Tables A-8 and A-9.** It is not possible to reproduce many of the risk values and hazard indices listed in these tables for Alternatives 3 and 4, especially for trespasser scenarios. These calculations should be verified for accuracy.
17. **Appendix B, Section 2.3.2, 1st Paragraph and Figure 2.** The text states that "... contaminated surface soil was excavated with an area about 250 feet by 200 feet. The source area was extended in each direction by 50 feet from the excavated area. Therefore, the source area is 350 feet by 300 feet (see Figure 2)." However, in Figure 2 the source area is 350 feet by 250 feet. The text and/or Figure 2 should be corrected.
18. **Appendix B, Section 4.2, 1st Paragraph.** The text states that "Acceptable groundwater concentrations protective of surface water at lagoon and sediments at the Groundwater interface at lagoon were developed in order to calculate the groundwater RGOs presented in Table 5." However, Table 5 presents "Soil Partitioning Coefficients and Half-Life." It appears that the table mentioned should be Table 6 which presents "Groundwater Criteria Protective of Surface Water and Sediment." The text should be corrected.
19. **Appendix C.** In Section 5.0 of the Draft CMS Report (Evaluation of the Corrective Measure Alternatives for SWMU 2), the text states that there will be annual groundwater sampling and biomonitoring of ecological receptors for Alternatives 2 and 3. Also, for Alternative 4, groundwater, sediment, and surface water sampling and ecological receptor biomonitoring will be conducted one year after completion of Alternative 4. However, review of Appendix C (Cost Analysis for Alternatives) shows that groundwater sampling was not included in the annual costs. This discrepancy should be corrected.